



BTI-45
SEQUENCE LISTING

<110> Mor, Tsafrir

Hermona, Soreq

Charles, Arntzen

Hugh, Mason

<120> EXPRESSION OF RECOMBINANT HUMAN ACETYLCHOLINESTERASE IN TRANSGENIC TOMATOES

<130> BTI-45

<140> 09/810,861

<141> 2001-03-16

<150> 06/190,440

<151> 2000-03-17

<160> 5

<170> PatentIn version 3.0

<210> 1

<211> 29

<212> DNA

<213> Homo sapiens

<400> 1
gatatctgca gccatggcta ggccccgc

29

<210> 2

<211> 31

<212> DNA

<213> Homo sapiens

<400> 2
cggtacctat caggtagcgc tgagcaattt g

31

<210> 3

<211> 5767

<212> DNA

<213> synthetic construct

<400> 3
agcttgcattg cctgcaggtc aacatggtgg agcacgacac tctcgtctac tccaagaata 60
tcaaagatac agtctcagaa gaccagaggg ctattgagac ttttcaacaa agggtaatat 120
cgggaaacct cctcggattc cattgcccag ctatctgtca cttcatcgaa aggacagtag 180
aaaaggaaga tggcttctac aaatgccatc attgcgataa aggaaaggct atcgttcaag 240
aatgcctcta ccgacagtgg tcccaaagat ggacccccac ccacgaggaa catcgtggaa 300
aaagaagacg ttccaaccac gtcttcaaag caagtggatt gatgtgataa cttttcaaca 360
aagggttaata tcgggaaacc tcctcggatt ccattgcccga gctatctgtc acttcatcga 420
aaggacagta gaaaaggaag atgggttcta caaatgccat cattgcgata aaggaaaggc 480
tatcgttcaa gaatgcctct accgacagtg gtcccaaaga tggacccccca cccacgagga 540
acatcgtgga aaaagaagac gttccaacca cgtcttcaaa gcaagtggat tgatgtgata 600
tctccactga cgtaagggat gacgcacaat cccactatcc ttcgcaagac ccttcctcta 660
tataaggaag ttcatttcat ttggagagga cctcgagaat taatttcaa cacaacatat 720
acaaaacaaa cgaatctcaa gcaatcaagc atttacttc tattgcagca atttaaatca 780
tttcttttaa agcaaaagca attttctgaa aattttcacc atttacgaac gatagccatg 840
gctccccgc agtgtctgct gcacacgcct tccctggctt cccactcct tctcctcctc 900
ctctggctcc tgggtggagg agtgggggct gagggccggg aggatgcaga gctgctggtg 960
acggtgcgtg ggggcccggct gcggggcatt cgcctgaaga cccccggggg ccctgtctct 1020
gctttcctgg gcatccctt tgcggagcca cccatgggac cccgtcgtt tctgccaccg 1080
gagccaagc agccttggtc aggggtggta gacgtacaa ccttccagag tgtctgtac 1140
caatatgtgg acaccctata cccaggtttt gagggcaccg agatgtggaa cccaaccgt 1200
gagctgagcg aggactgcct gtacctcaac gtgtggacac catacccccg gcctacatcc 1260
cccaccctg tcctcgtctg gatctatggg ggtggcttct acagtggggc ctctccttg 1320
gacgtgtacg atggccgctt cttggtacag gccgagagga ctgtgctggt gtccatgaac 1380

BTI-45

taccgggtgg gagcctttgg cttcctggcc ctgccgggga gccgagaggc cccgggcaat	1440
gtgggtctcc tggatcagag gctggccctg cagtgggtgc aggagaacgt ggcagccttc	1500
gggggtgacc cgacatcagt gacgctgttt ggggagagcg cgggagccgc ctcggtgggc	1560
atgcacctgc tgtccccgcc cagccggggc ctgttcaca gggccgtgct gcagagcgg	1620
gcccccaatg gaccctgggc cacgggtggc atgggagagg cccgtcgcag ggccacgcag	1680
ctggcccacc ttgtgggctg tcctccaggc ggcactggtg ggaatgacac agagctggt	1740
gcctgccttc ggacacgacc agcgcaggc ctggtgaacc acgaatggca cgtgctgcct	1800
caagaaagcg tcttcgggtt ctccttcgtg cctgtggtag atggagactt cctcagtgc	1860
acccagagg ccctcatcaa cgcgggagac ttccacggcc tgcagggtgct ggtgggtgtg	1920
gtgaaggatg agggctcgta ttttctggtt tacggggccc caggcttcag caaagacaac	1980
gagtctctca tcagccgggc cgagttcctg gccgggggtg gggctgggggt tccccaggta	2040
agtgccttg cagccgaggc tgtggtcctg cattacacag actggctgca tcccaggac	2100
ccggcacgcc tgaggaggc cctgagcgat gtggtgggcg accacaatgt cgtgtgcccc	2160
gtggcccagc tggctgggcg actggctgcc cagggtgccc gggctctacgc ctacgtcttt	2220
gaacaccgtg cttccacgct ctcctggccc ctgtggatgg gggtgcccca cggctacgag	2280
atcgagttca tctttgggat ccccttgac ccctctcgaa actacacggc agaggagaaa	2340
atcttcgccc agcgactgat gcgatactgg gccaaactttg cccgcacagg ggatcccaat	2400
gagccccgag accccaaggc cccacaatgg ccccggtaca cggcgggggc tcagcagtac	2460
gttagtctgg acctgcggcc gctggagggtg cggcgggggc tgcgcgcca ggcctgcgcc	2520
ttctggaacc gcttcctccc caaattgctc agcgtacct gataggtagc gagctctctc	2580
aacaatctag ctagagtttg ctcctatcta tatgtaataa ggtatgctga tatgcactat	2640
tcaaatagga gcattagcta tgtttggtta tgctacttta tgttatgtgg gtaagtcacc	2700
taagacactc cacgtacctc cgttgttgct tcttaccggc ttaataaat cttctgccct	2760
tgttccatat ttactaatta tccctttctt cactaaaaga aaattgttat cattaagtat	2820
tagtctttag aacatatgag gtctttaatt gggtaggttt tacaaattaa ctaataataa	2880
atgtcataaa atccacgtgg ttaaacaat gcagaaaatc gacgtcgtct attggaccga	2940
cagttgctat taatataatg ggccaccata gtagactgac aaataaatta cctgacaaca	3000
tcgtttcact aaataacaaa cacaaaaagg gagtgcattt tccaggcat ttttgtaata	3060
aaaaacagtt aaaaggaggt gcaatagaaa tataggggtg tggaatatgt gatttgagca	3120
cgtcttgaag cgaattcact ggccgtcgtt ttacaacgtc gtgactggga aaaccctggc	3180
gttaccacac ttaatcgcct tgcagacat cccctttcgc ccagctggcg taatagcgaa	3240

BTI-45

gagggccgca ccgatcgccc ttcccaacag ttgcgagacc tgaatggcga atggcgccctg 3300
 atgcgggtatt ttctccttac gcatctgtgc ggtatttcac accgcatatg gtgcactctc 3360
 agtacaatct gctctgatgc cgcatagtta agccagcccc gacacccgcc aacacccgct 3420
 gacgcgccct gacgggcttg tctgctcccg gcatccgctt acagacaagc tgtgaccgtc 3480
 tccgggagct gcatgtgtca gaggttttca ccgtcatcac cgaaacgcgc gagacgaaag 3540
 ggccctcgtga tacgcctatt tttataggtt aatgtcatga taataatggg ttcttagacg 3600
 tcagggtggca cttttcgggg aaatgtgcmc ggaaccccta tttgtttatt tttctaaata 3660
 cattcaaata tgtatccgct catgagacaa taaccctgat aaatgcttca ataatttga 3720
 aaaaggaaga gtatgagtat tcaacatttc cgtgtcgccc ttattccctt ttttgcggca 3780
 ttttgccttc ctgtttttgc tcaccagaa acgctgggtga aagtaaaaga tgctgaagat 3840
 cagttgggtg cagcagtggtg ttacatcgaa ctggatctca acagcggtaa gatccttgag 3900
 agttttcgcc ccgaagaacg ttttccaatg atgagcactt ttaaagttct gctatgtggc 3960
 gcggtattat cccgtattga cgccgggcaa gagcaactcg gtcgccgcat acactattct 4020
 cagaatgact tggttgagta ctaccagtc acagaaaagc atcttacgga tggcatgaca 4080
 gtaagagaat tatgcagtgc tgccataacc atgagtata acactgcggc caacttactt 4140
 ctgacaacga tcggaggacc gaaggagcta accgcttttt tgcacaacat gggggatcat 4200
 gtaactcgcc ttgatcgttg ggaaccggag ctgaatgaag ccataccaaa cgacgagcgt 4260
 gacaccacga tgcctgtagc aatggcaaca acgttgcgca aactattaac tggcgaacta 4320
 ctactctag cttcccggca acaattaata gactggatgg aggcggataa agttgcagga 4380
 ccacttctgc gtcggccct tccggctggc tggtttattg ctgataaatc tggagccggt 4440
 gagcgtgggt ctgcggtat cattgcagca ctggggccag atggtaagcc ctcccgtatc 4500
 gtagttatct acacgacggg gagtcaggca actatggatg aacgaaatag acagatcgct 4560
 gagataggtg cctcactgat taagcattgg taactgtcag accaagttta ctcatatata 4620
 ctttagattg atttaaaact tcatttttaa tttaaaagga tctaggtgaa gatccttttt 4680
 gataatctca tgaccaaaat cccttaacgt gagttttcgt tccactgagc gtcagacccc 4740
 gtagaaaaga tcaaaggatc ttcttgagat cttttttttc tgcgcgtaat ctgctgcttg 4800
 caaacaacaa aaccaccgct accagcgggtg gtttgtttgc cggatcaaga gctaccaact 4860
 ctttttccga aggtaactgg cttcagcaga gcgcagatac caaatactgt ctttctagtg 4920
 tagccgtagt taggccacca cttcaagaac tctgtagcac cgcctacata cctcgtcttg 4980
 ctaatcctgt taccagtggc tgctgccagt ggcgataagt cgtgtcttac cgggttgagc 5040
 tcaagacgat agttaccgga taaggcgcag cggtcgggct gaacggggggg ttcgtgcaca 5100
 cagcccagct tggagcgaac gacctacacc gaactgagat acctacagcg tgagctatga 5160

BTI-45

gaaagcgcca cgcttcccga agggagaaaag gcggacaggt atccggtaag cggcagggtc 5220
 ggaacaggag agcgcacgag ggagcttcca gggggaaacg cctggatatct ttatagtcct 5280
 gtcgggtttc gccacctctg acttgagcgt cgatTTTTgt gatgctcgtc aggggggcgg 5340
 agcctatgga aaaacgccag caacgcggcc tttttacggt tcctggcctt ttgctggcct 5400
 tttgctcaca tgttctttcc tgcgttatcc cctgattctg tggataaccg tattaccgcc 5460
 tttgagttag ctgataccgc tcgccgcagc cgaacgaccg agcgcagcga gtcagttagc 5520
 gaggaagcgg aagagcgccc aatacgcaaa ccgcctctcc ccgcgcgttg gccgattcat 5580
 taatgcagct ggcacgacag gtttcccga tggaaagcgg gcagttagcg caacgcaatt 5640
 aatgtgagtt agctcactca ttaggcaccc caggctttac actttatgct tccggctcgt 5700
 atgttgtgtg gaattgtgag cggataacaa tttcacacag gaaacagcta tgaccatgat 5760
 tacgcca 5767

<210> 4

<211> 14446

<212> DNA

<213> synthetic construct

<220>

<221> misc_feature

<222> (11862)..(12157)

<223> Identity of sequence residues 11862 to 12157 is unknown.

<400> 4

gaattaattc tcaacacaac atatacaaaa caaacgaatc tcaagcaatc aagcattcta 60
 cttctattgc agcaatttaa atcatttctt ttaaagcaaa agcaattttc tgaaaatttt 120
 caccatttac gaacgatagc catggctccc ccgcagtgtc tgctgcacac gccttccctg 180
 gcttccccac tccttctcct cctcctctgg ctctgggtg gaggagtggg ggctgagggc 240
 cgggaggatg cagagctgct ggtgacggtg cgtggggggc ggctgcgggg cattcgctg 300
 aagacccccg ggggccctgt ctctgctttc ctgggcatcc cttttgcgga gccacccatg 360
 ggacccccgtc gctttctgcc accggagccc aagcagcctt ggtcaggggt ggtagacgct 420
 acaaccttcc agagtgtctg ctaccaatat gtggacaccc tataccagg ttttgagggc 480

BTI-45

accgagatgt ggaaccccaa ccgtgagctg agcgaggact gcctgtacct caacgtgtgg 540
 acaccatacc cccggcctac atccccacc cctgtcctcg tctggatcta tgggggtggc 600
 ttctacagtg gggcctcctc cttggacgtg tacgatggcc gcttcttggg acagggcgag 660
 aggactgtgc tgggtgtccat gaactaccgg gtgggagcct ttggcttcct ggccctgccg 720
 gggagccgag aggccccggg caatgtgggt ctctggatc agaggctggc cctgcagtgg 780
 gtgcaggaga acgtggcagc cttcgggggt gacccgacat cagtgcgct gtttggggag 840
 agcgcgggag ccgcctcggg gggcatgcac ctgtgtccc cgcccagccg gggcctgttc 900
 cacagggccg tgctgcagag cggtgcccc aatggaccct gggccacggg gggcatggga 960
 gaggcccgtc gcagggccac gcagctggcc caccttgtgg gctgtcctcc agggggcact 1020
 ggtgggaatg acacagagct ggtagcctgc cttcggacac gaccagcgca ggtcctgggtg 1080
 aaccacgaat ggcacgtgct gcctcaagaa agcgtcttcc ggttctcctt cgtgcctgtg 1140
 gtagatggag acttcctcag tgacacccca gagggcctca tcaacgcggg agacttcac 1200
 ggcctgcagg tgctggtggg tgtggtgaag gatgagggt cgtattttct ggtttacggg 1260
 gccccaggct tcagcaaaga caacgagtct ctcatcagcc gggccgagtt cctggccggg 1320
 gtgcgggtcg gggttccca ggtaagtgc ctggcagccg aggtgtggt cctgcattac 1380
 acagactggc tgcatcccga ggacccggca cgcctgaggg aggccctgag cgatgtggtg 1440
 ggcgaccaca atgtcgtgtg ccccggtggc cagctggctg ggcgactggc tgcccagggt 1500
 gccgggtct acgcctacgt ctttgaacac cgtgcttcca cgctctcctg gccctgtgg 1560
 atgggggtgc cccacggcta cgagatcgag ttcatttttg ggatccccct ggacccctct 1620
 cgaaactaca cggcagagga gaaaatcttc gcccagcgac tgatgcgata ctgggccaac 1680
 tttgcccgca caggggatcc caatgagccc cgagacccca agggcccaaca atggcccccg 1740
 tacacggcgg gggctcagca gtacgttagt ctggacctgc ggccgctgga ggtgcggcgg 1800
 gggctgcgcg cccaggcctg cgccttctgg aaccgcttcc tccccaaatt gctcagcgct 1860
 acctgatagg taccgagctc tctcaacaat ctagctagag tttgctccta tctatatgta 1920
 ataaggatat ctgatatgca ctattcaaat aggagcatta gctatgtttg ttaatgtcac 1980
 tttatgttat gtgggtaagt cacctaagac actccacgta cctacgttgt tgtctcttac 2040
 cggctttaat aaatcttctg cccttgttcc atatttacta attatccctt tcttcactaa 2100
 aagaaaattg ttatcattaa gtattagtct ttagaacata tgaggtcttt aattgggtag 2160
 gttttacaaa ttaactaata taaaatgtca taaaatccac gtggttaaac aaatgcagaa 2220
 aatcgacgtc gtctattgga ccgacagttg ctattaatat aatggggccac catagtagac 2280
 tgacaaataa attacctgac aacatcgttt cactaaataa caaacacaaa aagggagtgc 2340
 attttccagg gcatttttgt aataaaaaac agttaaaagg gagtgcaata gaaatatagg 2400

BTI-45

ggtgtgga	aaa tagtgatttg	agcacgtctt	gaagcgaatt	cgagatcggc	cgcggtgag	2460
tggctccttc	aatcgttgcg	gttctgtcag	ttccaaacgt	aaaacggctt	gtcccgcgtc	2520
atcggcgggg	gtcataacgt	gactccctta	attctccgct	catgatcaga	ttgtcgtttc	2580
ccgccttcag	tttaaactat	cagtgtttga	caggatatat	tggcgggtaa	acctaagaga	2640
aaagagcgtt	tattagaata	atcggatatt	taaaagggcg	tgaaaagggt	tatccgttcg	2700
tccatttgta	tgtgcatgcc	aaccacaggg	ttccccagat	ctggcgccgg	ccagcgagac	2760
gagcaagatt	ggccgcccgc	cgaacgatc	cgacagcgcg	cccagcacag	gtgcgcaggc	2820
aaattgcacc	aacgcataca	gcgccagcag	aatgccatag	tgggcgggtga	cgtcgttcga	2880
gtgaaccaga	tcgcgcagga	ggcccggcag	caccggcata	atcaggccga	tgccgacagc	2940
gtcgagcgcg	acagtgtca	gaattacgat	caggggtatg	ttgggtttca	cgctctggcct	3000
ccggaccagc	ctccgctggt	ccgattgaac	gcgcggattc	tttatcactg	ataagttggt	3060
ggacatatta	tgtttatcag	tgataaagtg	tcaagcatga	caaagttgca	gccgaataca	3120
gtgatccgtg	ccgccctgga	cctgttgaa	gaggtcggcg	tagacggtct	gacgacacgc	3180
aaactggcgg	aacggttggg	ggttcagcag	ccggcgcttt	actggcactt	caggaacaag	3240
cgggcgctgc	tcgacgcact	ggccgaagcc	atgctggcgg	agaatcatac	gcattcggtg	3300
ccgagagccg	acgacgactg	gcgctcattt	ctgatcggga	atgcccgag	cttcaggcag	3360
gcgctgctcg	cctaccgcga	tggcgcgcg	atccatgccg	gcacgcgacc	gggcgcaccg	3420
cagatggaaa	cggccgacgc	gcagcttcgc	ttcctctgcg	aggcgggttt	ttcggccggg	3480
gacgccgtca	atgcgctgat	gacaatcagc	tacttcactg	ttggggccgt	gcttgaggag	3540
caggccggcg	acagcgatgc	cggcgagcgc	ggcggcaccg	ttgaacaggc	tccgctctcg	3600
ccgctgttgc	gggccgcgat	agacgccttc	gacgaagccg	gtccggacgc	agcgttcgag	3660
cagggactcg	cggtgattgt	cgatggattg	gcgaaaagga	ggctcgttgt	caggaacgtt	3720
gaaggaccga	gaaaggggtga	cgattgatca	ggaccgctgc	cggagcgcaa	cccactcact	3780
acagcagagc	catgtagaca	acatcccctc	cccctttcca	ccgcgtcaga	cgcccgtagc	3840
agcccgtac	gggctttttc	atgccctgcc	ctagcgtcca	agcctcacgg	ccgcgctcgg	3900
cctctctggc	ggccttctg	cgctcttccg	cttctctgct	cactgactcg	ctgcgctcgg	3960
tcgttcggct	gcggcgagcg	gtatcagctc	actcaaaggc	ggtaatacgg	ttatccacag	4020
aatcagggga	taacgcagga	aagaacatgt	gagcaaaagg	ccagcaaaag	gccaggaacc	4080
gtaaaaaggc	cgcgttgctg	gcgtttttcc	ataggctccg	ccccctgac	gagcatcaca	4140
aaaatcgacg	ctcaagtcag	aggtggcgaa	acccgacagg	actataaaga	taccaggcgt	4200
ttccccctgg	aagctccctc	gtgcgctctc	ctgttccgac	cctgccgctt	accggatacc	4260

BTI-45

tgtccgcctt tctcccttcg ggaagcgtgg cgcttttccg ctgcataacc ctgcttcggg	4320
gtcattatag cgattttttc ggtatatcca tccttttttcg cacgatatac aggattttgc	4380
caaagggttc gtgtagactt tccttggtgt atccaacggc gtcagccggg caggataggt	4440
gaagtaggcc caccgcgag cgggtgttcc ttcttctactg tcccttattc gcacctggcg	4500
gtgctcaacg ggaatcctgc tctgcgaggc tggccggcta ccgccggcgt aacagatgag	4560
ggcaagcgga tggctgatga aaccaagcca accaggaagg gcagcccacc tatcaagggtg	4620
tactgccttc cagacgaacg aagagcgatt gagggaaaagg cggcggcggc cggcatgagc	4680
ctgtcggcct acctgctggc cgtcggccag ggctacaaaa tcacgggcgt cgtggactat	4740
gagcacgtcc gcgagctggc ccgcatcaat ggcgacctgg gccgcctggg cggcctgctg	4800
aaactctggc tcaccgacga cccgcgcacg gcgcggttcg gtgatgccac gatcctcgcc	4860
ctgctggcga agatcgaaga gaagcaggac gagcttgga aggtcatgat gggcgtggtc	4920
cgcccgaggg cagagccatg acttttttag ccgctaaaac ggccgggggg tgcgcgatgat	4980
tgccaagcac gtcccatgc gctccatcaa gaagagcgac ttcgcgagc tggatgaagta	5040
catcaccgac gagcaaggca agaccgagcg cctttgcgac gctcaccggg ctggttgccc	5100
tcgccgctgg gctggcggcc gtctatggcc ctgcaaacgc gccagaaacg ccgtcgaagc	5160
cgtgtgcgag acaccgcggc cgccggcggt gtggatacct cgcggaaaac ttggccctca	5220
ctgacagatg aggggcggac gttgacactt gaggggcca ctcaccggc gcggcggtga	5280
cagatgaggg gcaggctcga tttcggccgg cgacgtggag ctggccagcc tcgcaaactg	5340
gcgaaaacgc ctgattttac gcgagtttcc cacagatgat gtggacaagc ctggggataa	5400
gtgccctgcg gtattgacac ttgaggggcg cgactactga cagatgaggg gcgcgatcct	5460
tgacacttga ggggcagagt gctgacagat gaggggcgca cctattgaca tttgaggggc	5520
tgtccacagg cagaaaatcc agcatttgca agggtttccg cccgtttttc ggccaccgct	5580
aacctgtctt ttaacctgct tttaaacc aa ttttataaa cttgtttttt aaccagggct	5640
gcgccctgtg cgcgtgaccg cgcacgccga aggggggtgc ccccccttct cgaaccctcc	5700
cggcccgtc acgcgggcct cccatcccc caggggctgc gcccctcggc cgcgaacggc	5760
ctcaccctaa aaatggcagc gctggcagtc cttgccattg ccgggatcgg ggagtaacg	5820
ggatgggcga tcagcccag cgcgacgccc ggaagcattg acgtgccga ggtgctggca	5880
tcgacattca gcgaccaggt gccgggcagt gagggcgcg gcctgggtgg cggcctgccc	5940
ttcacttcgg ccgtcggggc attcacggac ttcattggcg ggccggcaat tttaccttg	6000
ggcattcttg gcatagtggc cgcgggtgcc gtgctcgtgt tcgggggtgc gataaaccca	6060
gcgaaccatt tgaggtgata ggtaagatta taccgaggta tgaaaacgag aattggacct	6120
ttacagaatt actctatgaa gcgccatatt taaaaagcta ccaagacgaa gaggatgaag	6180

BTI-45

aggatgagga ggcagattgc cttgaatata ttgacaatac tgataagata atatatcttt	6240
tatatagaag atatcgccgt atgtaaggat ttcagggggc aaggcatagg cagcgcgctt	6300
atcaatatat ctatagaatg ggcaaagcat aaaaacttgc atggactaat gcttgaaacc	6360
caggacaata accttatagc ttgtaaattc tatkataatt gggtaatgac tccaacttat	6420
tgatagtgtt ttatgttcag ataatgccg atgactttgt catgcagctc caccgatttt	6480
gagaacgaca gcgacttccg tcccagccgt gccagggtgct gcctcagatt caggttatgc	6540
cgctcaattc gctgcgtata tcgcttgctg attacgtgca gctttccctt caggcgggat	6600
tcatacagcg gccagccatc cgtcatccat atcaccacgt caaagggatga cagcaggctc	6660
ataagacgcc ccagcgtcgc catagtgcgt tcaccgaata cgtgcgcaac aaccgtcttc	6720
cggagactgt catacgcgta aaacagccag cgctggcgcg atttagcccc gacatagccc	6780
cactgttcgt ccatttccgc gcagacgatg acgtcactgc ccggctgtat gcgagaggtt	6840
accgactgcg gcctgagttt ttttaagtgc gtaaaatcgt gttgaggcca acgcccataa	6900
tgcgggctgt tgcccggcat ccaacgccat tcatggccat atcaatgatt ttctggtgcg	6960
taccgggttg agaagcggtg taagtgaact gcagttgcc agtttttacgg cagtgcagagc	7020
agagatagcg ctgatgtccg gcggtgcttt tgccgttacg caccaccccg tcagtagctg	7080
aacaggaggg acagctgata gacacagaag ccactggagc acctcaaaaa caccatcata	7140
cactaaatca gtaagttggc agcatcacc ataattgtgg tttcaaaatc ggctccgctg	7200
atactatgtt atacgccaac tttgaaaaca actttgaaaa agctgttttc tggatattta	7260
ggttttagaa tgcaaggaac agtgaattgg agttcgtctt gttataatta gcttcttggg	7320
gtatctttta atactgtaga aaagaggaag gaaataataa atggctaaaa tgagaatatc	7380
accggaattg aaaaaactga tcgaaaaata ccgctgcgta aaagatacgg aaggaatgtc	7440
tcctgctaag gtatataagc tgggtgggaga aaatgaaaac ctatatttaa aaatgacgga	7500
cagccggtat aaagggacca cctatgatgt ggaacgggaa aaggacatga tgctatggct	7560
ggaaggaaag ctgcctgttc caaaggctct gcactttgaa cggcatgatg gctggagcaa	7620
tctgctcatg agtgaggccg atggcgtcct ttgctcgga gagtatgaag atgaacaaag	7680
ccctgaaaag attatcgagc tgtatgcgga gtgcatcagg ctctttcact ccatcgacat	7740
atcggattgt ccctatacga atagcttaga cagccgctta gccgaattgg attacttact	7800
gaataacgat ctggccgatg tggattgcga aaactgggaa gaagacactc catttaaaga	7860
tccgcgcgag ctgtatgatt ttttaaagac ggaaaagccc gaagaggaac ttgtcttttc	7920
ccacggcgac ctgggagaca gcaacatctt tgtgaaagat ggcaaagtaa gtggctttat	7980
tgatcttggg agaagcgga gggcggaaca gtggtatgac attgccttct gcgtccggtc	8040

BTI-45

gatcagggag gatatcgggg aagaacagta tgtcga gcta ttttttgact tactggggat	8100
caagcctgat tgggagaaaa taaaatatta tattttactg gatgaattgt tttagtacct	8160
agatgtggcg caacgatgcc ggcgacaagc aggagcgcac cgactttctt cgcatacaagt	8220
gttttggtc tcaggccgag gcccacggca agtatttggg caaggggtcg ctggtattcg	8280
tgcagggcaa gattcggaat accaagtacg agaaggacgg ccagacggtc tacgggaccg	8340
acttcattgc cgataaggtg gattatctgg acaccaaggc accaggcggg tcaaatacagg	8400
aataagggca cattgccccg gcgtgagtcg gggcaatccc gcaaggaggg tgaatgaatc	8460
ggacgtttga ccggaaggca tacaggcaag aactgatcga cgcggggttt tccgccgagg	8520
atgccgaaac catcgcaagc cgcaccgtca tgggtggcgc cgcgaaaacc ttccagtcgc	8580
tcggctcgat ggtccagcaa gctacggcca agatcgagcg cgacagcgtg caactggctc	8640
cccctgccct gcccgcgcca tcggccggcg tggagcggtt gcgtcgtctc gaacaggagg	8700
cggcaggttt ggcgaagtcg atgaccatcg acacgcgagg aactatgacg accaagaagc	8760
gaaaaaccgc cggcgaggac ctggcaaaac aggtcagcga ggccaagcag gccgcgttgc	8820
tgaaacacac gaagcagcag atcaaggaaa tgcagctttc cttgttcgat attgcgccgt	8880
ggccggacac gatgcgagcg atgccaaacg acacggcccc ctctgccctg ttcaccacgc	8940
gcaacaagaa aatcccgcgc gaggcgctgc aaaacaaggt cattttccac gtcaacaagg	9000
acgtgaagat cacctacacc ggcgtcgagc tgcgggccga cgatgacgaa ctggtgtggc	9060
agcagggtgtt ggagtacgcg aagcgcaccc ctatcggcga gccgatcacc ttcacgttct	9120
acgagctttg ccaggacctg ggctggtcga tcaatggccg gtattacacg aaggccgagg	9180
aatgcctgtc gcgcctacag gcgacggcga tgggcttcac gtccgaccgc gttgggcacc	9240
tggaatcggg gtcgctgctg caccgcttcc gcgtcctgga ccgtggcaag aaaacgtccc	9300
gttgccagggt cctgatcgac gaggaaatcg tcgtgctgtt tgctggcgac cactacacga	9360
aattcatatg ggagaagtac cgcaagctgt cgccgacggc ccgacggatg ttcgactatt	9420
tcagctcgca ccgggagccg taccgctca agctggaaac cttccgcctc atgtgcggat	9480
cggattccac ccgcgtgaag aagtggcgcg agcaggtcgg cgaagcctgc gaagagttgc	9540
gaggcagcgg cctgggtggaa cacgcctggg tcaatgatga cctgggtgcat tgcaaacgct	9600
agggccttgt ggggtcagtt ccggctgggg gttcagcagc cagcgcttta ctggcatttc	9660
aggaacaagc gggcactgct cgacgcactt gcttcgctca gtatcgctcg ggacgcacgg	9720
cgcgctctac gaactgccga taaacagagg attaaaattg acaattgtga ttaaggctca	9780
gattcgacgg cttggagcgg ccgacgtgca ggatttccgc gagatccgat tgtcggccct	9840
gaagaaagct ccagagatgt tcgggtccgt ttacgagcac gaggagaaaa agcccatgga	9900
ggcgcttcgt gaacggttgc gagatgccgt ggcattcggc gcctacatcg acggcgagat	9960

BTI-45

cattgggctg tcggtcttca aacaggagga cggccccaag gacgctcaca aggcgcatct 10020
gtccggcggtt ttcgtggagc ccgaacagcg aggccgaggg gtcgccggta tgctgctgcg 10080
ggcggttgccg gcggggtttat tgctcgtgat gatcgtccga cagattccaa cggaatctg 10140
gtggatgcgc atcttcatcc tcggcgcaact taatatttcg ctattctgga gcttggtgtt 10200
tatttcggtc taccgcctgc cgggcggggg cgccggcgac gtaggcgctg tgcagccgct 10260
gatggtcgtg ttcattctctg ccgctctgct aggtagcccc atacgattga tggcggtcct 10320
gggggctatt tgcggaactg cgggcgtggc gctgttggtg ttgacaccaa acgagcgct 10380
agatcctgtc ggcgtcgcag cgggcctggc gggggcggtt tccatggcgt tcggaaccgt 10440
gctgaccgc aagtggcaac ctcccgtgcc tctgctcacc ttaccgcct ggcaactggc 10500
ggccggagga cttctgctcg ttccagtagc tttagtgtt gatccgcaa tcccgatgcc 10560
tacaggaacc aatgttctcg gcctggcgtg gctcggcctg atcggagcgg gtttaacct 10620
cttcctttgg ttccggggga tctcgcgact cgaacctaca gttgtttcct tactgggctt 10680
tctcagcccc agatctgggg tcgatcagcc ggggatgcat caggccgaca gtcggaactt 10740
cgggtccccg acctgtacca ttcggtgagc aatggatagg ggagttgata tcgtcaacgt 10800
tcacttctaa agaaatagcg ccaactcagct tcctcagcgg ctttatccag cgatttccta 10860
ttatgtcggc atagttctca agatcgacag cctgtcacgg ttaagcgaga aatgaataag 10920
aaggctgata attcggatct ctgcgagggg gatgatattt gatcacaggc agcaacgctc 10980
tgtcatcggtt acaatcaaca tgctaccctc cgcgagatca tccgtgtttc aaaccggca 11040
gcttagttgc cgttcttccg aatagcatcg gtaacatgag caaagtctgc cgccttacia 11100
cggctctccc gctgacgccg tcccggactg atgggctgcc tgtatcgagt ggtgattttg 11160
tgccgagctg ccggtcgggg agctgttggc tggctgggtg caggatatat tgtggtgtaa 11220
acaaattgac gcttagacaa ctttaataaca cattgcggac gtttttaatg tactggggtg 11280
gtttttcttt tcaccagtga gacgggcaac agctgattgc cttcaccgc ctggccctga 11340
gagagttgca gcaagcggtc cacgctgggt tgccccagca ggcgaaaatc ctgtttgatg 11400
gtggttccga aatcggcaaa atcccttata aatcaaaaga atagcccag ataggggtga 11460
gtgttggtcc agtttggaac aagagtccac tattaagaa cgtggactcc aacgtcaaag 11520
ggcgaaaaac cgtctatcag ggcgatggcc cactacgtga accatcacc aaatcaagtt 11580
ttttggggtc gaggtgccgt aaagcactaa atcggaaacc taaaggagc ccccgattta 11640
gagcttgacg gggaaagccg gcgaacgtgg cgagaaagga aggaagaaa gcgaaaggag 11700
cgggcgccat tcaggctgcg caactgttgg gaagggcgat cgggtcgggc ctcttcgcta 11760
ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagttgggt aacgccaggg 11820

BTI-45

ttttcccagt	cacgacgttg	taaaacgacg	gccagtgaat	tnnnnnnnnn	nnnnnnnnnn	11880
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	11940
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	12000
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	12060
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	12120
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnngga	tccagatccc	gtgggcgaag	12180
aactccagca	tgagatcccc	gcgctggagg	atcatccagc	cggcgtccc	gaaaacgatt	12240
ccgaagccca	acctttcata	gaaggcggcg	gtggaatcga	aatctcgtga	tggcagggtg	12300
ggcgtcgctt	ggtcgggtcat	ttcgaacccc	agagtcccgc	tcagaagaac	tcgtcaagaa	12360
ggcgatagaa	ggcgatgcgc	tgcgaatcgg	gagcggcgat	accgtaaagc	acgaggaagc	12420
ggtcagccca	ttcgccgcca	agctcttcag	caatatcacg	ggtagccaac	gctatgtcct	12480
gatagcggtc	cgccacaccc	agccggccac	agtcgatgaa	tccagaaaag	cggccatttt	12540
ccaccatgat	attcggcaag	caggcatcgc	catgggtcac	gacgagatca	tcgccgtcgg	12600
gcatgcgcgc	cttgagcctg	gcgaacagtt	cggctggcgc	gagcccctga	tgctcttcgt	12660
ccagatcatc	ctgatcgaca	agaccggctt	ccatccgagt	acgtgctcgc	tcgatgcgat	12720
gtttcgcttg	gtggtcgaat	gggcaggtag	ccggatcaag	cgtatgcagc	cgccgcattg	12780
catcagccat	gatggatact	ttctcggcag	gagcaagggtg	agatgacagg	agatcctgcc	12840
ccggcacttc	gcccaatagc	agccagtccc	ttcccgttcc	agtgacaacg	tcgagcacag	12900
ctgcgcaagg	aacgcccgtc	gtggccagcc	acgatagccg	cgctgcctcg	tcctgcagtt	12960
cattcagggc	accggacagg	tcggtcttga	caaaaagaac	cgggcgcccc	tgcgctgaca	13020
gccggaacac	ggcggcatca	gagcagccga	ttgtctgttg	tgcccagtca	tagccgaata	13080
gcctctccac	ccaagcggcc	ggagaacctg	cgtgcaatcc	atcttgttca	atcatgcgaa	13140
aagatctgga	ttgagagtga	atatgagact	ctaattggat	accgagggga	atttatggaa	13200
cgtcagtgga	gcatttttga	caagaaatat	ttgctagctg	atagtacact	taggcgactt	13260
ttgaacgcgc	aataatggtt	tctgacgtat	gtgcttagct	cattaaactc	cagaaacccg	13320
cggctgagtg	gctccttcaa	cgttgcgggtt	ctgtcagttc	caaacgtaaa	acggcttgtc	13380
ccgcgtcatc	ggcgggggtc	ataacgtgac	tcccttaatt	ctccgctcat	gatcttgatc	13440
ccctgcgcca	tcagatcctt	ggcggcaaga	aagccatcca	gtttactttg	cagggcttcc	13500
caaccttacc	agagggcgcc	ccagctggca	attccggttc	gcttgctgtc	cataaaaccg	13560
cccagtctag	ctatcgccat	gtaagccac	tgcaagctac	ctgctttctc	tttgcgcttg	13620
cgttttccct	tgtccagata	gcccagtagc	tgacattcat	ccggggtcag	caccgtttct	13680
gcggactggc	tttctacgtg	ttccgcttcc	tttagcagcc	cttgcgccct	gagtgcctgc	13740

BTI-45

ggcagcgtga agcttgcatg cctgcagggtc aacatggtgg agcacgacac tctcgtctac 13800
 tccaagaata tcaaagatac agtctcagaa gaccagaggg ctattgagac ttttcaacaa 13860
 agggtaatat cgggaaacct cctcggattc cattgcccag ctatctgtca cttcatcgaa 13920
 aggacagtag aaaaggaaga tggcttctac aaatgccatc attgcgataa aggaaaggct 13980
 atcgttcaag aatgcctcta ccgacagtgg tcccaaagat ggacccccac ccacgaggaa 14040
 catcgtggaa aaagaagacg ttccaaccac gtcttcaaag caagtggatt gatgtgataa 14100
 cttttcaaca aagggaataa tcgggaaacc tcctcggatt ccattgcccc gctatctgtc 14160
 acttcatcga aaggacagta gaaaaggaag atggcttcta caaatgcatc cattgcgata 14220
 aaggaaaggc tatcgttcaa gaatgcctct accgacagtg gtcccaaaga tggacccccca 14280
 cccacgagga acatcgtgga aaaagaagac gttccaacca cgtcttcaaa gcaagtggat 14340
 tgatgtgata tctccactga cgtaagggat gacgcacaat cccactatcc ttcgcaagac 14400
 ccttcctcta tataaggaag ttcatttcat ttggagagga cctcga 14446

<210> 5

<211> 1725

<212> DNA

<213> synthetic construct

<400> 5

atgaggcccc cgcagtgtct gctgcacacg ccttccttgg cttccccact ctttctcttc 60
 ctcctctggc tcctgggtgg aggagtgggg gctgagggcc gggaggatgc agagctgctg 120
 gtgacggtgc gtgggggccc gctgcggggc attcgcttga agacccccgg gggccctgtc 180
 tctgctttcc tgggcatccc ctttgcgag ccacccatgg gaccccgctc ctttctgcca 240
 ccggagccca agcagccttg gtcaggggtg gtagacgcta caaccttcca gagtgtctgc 300
 taccaatatg tggacaccct ataccaggt tttgagggca ccgagatgtg gaacccaac 360
 cgtgagctga gcgaggactg cctgtacctc aacgtgtgga caccataccc ccggcctaca 420
 tccccacccc ctgtcctcgt ctggatctat gggggtggct tctacagtgg ggcctcctcc 480
 ttggacgtgt acgatggccg cttcttggta caggccgaga ggactgtgct ggtgtccatg 540
 aactaccggg tgggagcctt tggcttcctg gccctgccgg ggagccgaga ggccccgggc 600
 aatgtgggtc tcctggatca gaggctggcc ctgcagtggg tgcaggagaa cgtggcagcc 660
 ttcgggggtg acccgacatc agtgacgctg tttggggaga gcgcgggagc cgcctcgggtg 720
 ggcacgcacc tgctgtcccc gccagccgg ggcctgttcc acagggccgt gctgcagagc 780

BTI-45

ggtgccccca atggaccctg ggccacggtg ggcattgggag agggccgctg cagggccacg	840
cagctggccc accttgtggg ctgtcctcca ggcggcactg gtgggaatga cacagagctg	900
gtagcctgcc ttcggacacg accagcgag gtcctggtga accacgaatg gcacgtgctg	960
cctcaagaaa gcgtcttccg gttctccttc gtgcctgtgg tagatggaga cttcctcagt	1020
gacaccccag agggccctcat caacgcggga gacttccacg gcctgcaggt gctggtgggt	1080
gtggtgaagg atgagggtc gtattttctg gtttacggg cccaggctt cagcaaagac	1140
aacgagtctc tcatcagccg ggccgagttc ctggccggg tgcgggtcgg ggttccccag	1200
gtaagtgacc tggcagccga ggctgtggtc ctgcattaca cagactggct gcatcccag	1260
gacccggcac gcctgagggg ggccttgagc gatgtggtg gegaccaca tgtcgtgtgc	1320
cccgtggccc agctggctgg gcgactggct gccagggtg cccgggtcta cgcctacgtc	1380
tttgaacacc gtgcttccac gctctcctgg cccctgtgga tgggggtgcc ccacggctac	1440
gagatcgagt tcatctttgg gatccccctg gaccctctc gaaactacac ggcagaggag	1500
aaaatcttcg cccagcgact gatgcgatac tgggccaact ttgccgcac aggggatccc	1560
aatgagcccc gagaccccaa ggccccacaa tggccccgt acacggcggg ggctcagcag	1620
tacgttagtc tggacctgcg gccgctggag gtgcggcggg ggctgcgcgc ccaggcctgc	1680
gccttctgga accgcttct ccccaaattg ctcagcgcca cctga	1725